Solar PV Installation FAQ

A Publication of the Massachusetts Division of Energy Resources

Commonwealth of Massachusetts

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What is a photovoltaic system?
Photovoltaic (PV) Systems use the sun's energy to make electricity. PVs produce direct current electricity by collecting electrons freed by the interaction between sunlight and the semi-conductor materials in a PV cell.

Benefits of a PV System
A PV System eliminates or reduces the amount of electricity you purchase from your utility. A PV system saves money on your electricity and acts as a hedge on future price increases. Additionally, the electricity generated by PV systems is clean, renewable and reliable. Any excess electricity generated can be fed into the electric grid, earning the user money towards their bill.

What is a good site for a PV system?
A site must have unobstructed access to the sun, without shade from buildings, trees or other vegetation. South-facing roof exposure is best. If a rooftop is not available, a PV system can be mounted on the ground.

What is the standard size for a residential PV System?
The typical size for a residential PV System is 1-2 kWs.

How much space is needed for a system?
A small PV system requires as little as 50 square feet. For a typical 2kW system the need is 200 to 400 square feet.

How much does a PV System Cost?
An average PV system currently costs from $8-11 a watt or $16,000-$22,000 for a 2kW system, including installation. This cost can be reduced by state and federal incentives and grants (See below).

Where can I find a contractor?
Mass Renewable Energy Trust (MRET) provides information at its website, click here. The Boston Area Solar Energy Association, BASEA, also has a referral program at www.basea.org
Also see www.Findsolar.com

Are there any rebates or financing programs?
MRET offers incentives for electric customers of NSTAR, National Grid, Western MA Electric and Fitchburg Gas and Electric (Unitil) interested in building renewable systems. Current incentives include the ***Small Renewables Initiative***, part of the Green Buildings Program. Offers and incentives vary depending on eligibility requirements.

Are there tax incentives?
Massachusetts and the Federal Government offer tax incentives for PV systems, including exemption of sales taxes and value-added to property taxes. Visit DOER's Renewable Programs page for more information. Also the Solar Energy Industry Association website for their Federal Tax Guide. http://www.seia.org/

How to connect your PV System to the Grid
Consumers must contact their utility company and enter into an agreement with the utility to connect to the grid.

What is net metering and interconnection?
Electricity customers with renewable energy generation systems are allowed to interconnect with the grid and purchase whatever additional power they need from their electricity distribution company.

Net metering allows consumers to feed any surplus electricity generated by their system into the electric grid. For example, excess generation may occur during the day if the system produces more electricity than used.

Under Massachusetts law, customers with PV systems sized 60kW or smaller can sell excess power back to their utility and receive a credit for power produced. This practice is called "net metering." The customer is billed for the "net" electricity purchased from the utility over the entire billing period, i.e., the difference between the amount of electricity delivered from the power grid and the electricity generated by the PV system.

Utilities are prohibited from imposing special fees on these customers, such as backup charges and demand charges, additional controls, or liability insurance, as long as the generation facility meets established interconnection standards and all relevant safety and power quality standards.

Above section taken from MRET's: The Case for Installing Solar Electricity: A Guide for Massaschusetts Businesses

For an in depth description on net metering and interconnection, DOER and MRET provide the web based ***Interconnection Guide for Distributed Generation*.**

Renewable and Solar Energy Associations
Massachusetts Renewable Energy Trust (MRET) manages the state's rate-payer funded renewable energy trust which provides funding and incentives to renewable programs and initiatives in MA.

Northeast Sustainable Energy Association (NESEA) provides comprehensive information on renewable and sustainable energy. A non-profit out of Greenfield, MA, NESEA's website includes a yellow pages of contractors in MA who do renewable projects including solar installations.

Boston Area Solar Energy Association (BASEA) advocates for the use of solar and sustainable energy technologies. BASEA offers educational series, events and the demonstration of practical, cost effective techniques for implementing solar energy.

American Solar Energy Society (ASES) is a national organization promoting the use of solar energy in the US. Publishes a bi-monthly magazine, *Solar Today*, as well as links to programs across the country.

Solar Energy Business Association of New England (SEBANE): Trade Association with yellow pages of contractors in New England.